CLAIM AMENDMENTS

1. (currently amended) A diagnostic method for *in vivo* detection of cancerous epithelial cells by selective marking of the mitochondria thereof, comprising the ~~step~~ steps of (a) topically delivering to the epithelium containing cancerous cells in the locus of normal cells a cationic supravital mitochondrial marking agent other than toluidine blue O and (b) detecting cancerous cells *in vivo* which have been marked by absorption of said agent in the mitochondria thereof.

2. (original) A method for selective killing of epithelial cancer cells comprising the step of topically delivering to epithelial cancer cells a cationic supravital mitochondrial marking agent other than toluidine blue O.

3. (currently amended) ~~The method of claim 2 in which the agent is the reaction product of a cationic supravital mitochondrial marking agent and a cancer chemotherapeutic drug.~~
A method for selective killing of epithelial cancer cells comprising the step of topically delivering to epithelial cancer cells the reaction product of (a) a cationic supravital mitochondrial marking agent and (b) another chemotherapeutic drug.

4. (currently amended) The method of ~~claim 2~~ Claim 3 in which ~~the~~ said marking agent is topically delivered to epithelial cancer cells in combination with another cancer chemotherapeutic drug that selectively kills cancer cells by a different mechanism than the mechanism by which ~~the~~ said agent kills cancer cells.

5. (original) The methods of claims 1 or 2, in which the cationic supravital mitochondrial marking agent is selected to provide a molecular structure that does not hinder attraction of the positive charge of the marking agent molecule by the negative charges on the mitochondrial membranes.

6. (original) The methods of claims 1 or 2, in which the cationic supravital mitochondrial marking agent is selected to provide a molecular structure that permits the marking agent to bind to a specific site in the mitochondria.

7. (original) The methods of claims 1 or 2, in which the cationic supravital mitochondrial marking agent is selected to provide a structure that will intercalate into or stack along the mitochondrial DNA.

8. (original) The methods of claims 1 or 2, in which the cationic supravital mitochondrial marking agent is selected to provide a molecular structure that affects its reduction potential to permit it to change to the uncharged leuco form prior to, during, or after entry into the mitochondria.

9. (original) The methods of claims 1 or 2, in which the cationic supravital mitochondrial marking agent is selected to provide a molecular structure that will deprotonate at physiological pH.

10. (original) The methods of claims 1 or 2, in which the cationic supravital mitochondrial marking agent has a log *P* of 0-5.